AMENDMENTS TO THE SPECIFICATION

Please make the following amendments to the specification:

(Page 3, last paragraph)

The DMT 16-state trellis code constraint length is approximately four 4-dimensional symbols. ~~4-dimensional~~ Four-dimensional symbols are encoded as two 2-dimensional constellations on two tones. Four 4-dimensional symbols are thus encoded over eight tones. DFT suffers from performance limitations including sinx/x coupling of energy between adjacent tones. DMT convolutional encoders operate "serially" on mapped constellations such that consecutively generated constellations are mapped to adjacent tones. (Sin x)/x coupling allows noise on one tone to ~~effect~~ affect adjacent tones. Correlated noise on adjacent tones, particularly that within the DMT code constraint length, contributes to multiple metric calculations in the trellis decoder. Correlated noise in consecutive metric calculations causes negative gain and can result in a worse performance ~~worse~~ than if no coding was employed.

(Page 9, last paragraph)

FIG. 1 shows a block diagram of an ADSL DMT transceiver system 100 showing the basic functional blocks and interfaces. The ADSL transceiver system includes an ADSL remote transceiver (ADSL Transceiver-R) 102, a channel 104, and an ADSL central transceiver (ADSL Transceiver-C) 106. The ADSL Transceiver-R 102 is typically housed in an ADSL DMT modem 112. The ADSL Transceiver-C 106 is typically housed in a Digital Subscriber Line Access Multiplexer (DSLAM) 124. ADSL DMT transceiver system 100 shows a transmission system and method for data transport. Remote power feeding, which may be provided by the ADSL ~~Transceiver-C~~ Transceiver-C, 106 is not shown.

(Page 12, Paragraphs 2 and 3)

The ADSL DMT transmitter 200 receives input(s) from service modules 108 or remote network(s) 110. The multiplexor synchronous control element (Mux/Sync Control) 202 accepts the inputs and converts the inputs into multiplexed and synchronized data frames (mux data frames). The multiplexor synchronous control element 202 generates the mux data frames at a nominal ~~4kbaud~~ 4k baud.

The mux data frame output of the multiplexor synchronous control element 202 passes to the tone ordering element 208 by one of two ~~paths~~ paths, each carrying a binary data stream. The first binary data stream is a "fast" path that provides low latency. The second binary data stream is interleaved and provides a low error rate and results in a higher latency. Both paths are processed by a scrambler and forward error corrector (FEC) 204. The tone ordering element 208 receives binary data stream input from two paths in this embodiment. However, it is not critical to the tone ordering element 208 how it receives input, or the form of the input, as long as the input is in the form of a bit stream, or can be converted into a bit stream.

(Page 13, last paragraph)

The number of bits per tone and the relative gains to be used for every tone are calculated by the ADSL DMT receiver 502 and sent to the ADSL DMT transmitter 200 according to a protocol defined by ITU standards. The pairs of numbers, representing the bits per tone and the relative gains, are typically stored in ascending order of frequency or tone number i, in a bit and gain table. As with the original bit table b_i, and the ordered bit table b'_i table, the bit and gain table may be any system, computer program, hardware device, memory element, or logic device,

that organizes information in a readily retrievable manner. The bit and gain table may be two separate systems that are coordinated by any other device so that bit and gain information is available for the assignment of bits to tones. The bit and gain table is one means of ~~proving~~ providing bits and relative gain information. In this application, in the phrase "bits and relative gain information" the word "information" refers to "bits" and "relative gains" (information regarding the assignment of bits and the relative gains to be used for every tone) – in contrast to an interpretation of the phrase as "logical bits plus relative gain information."